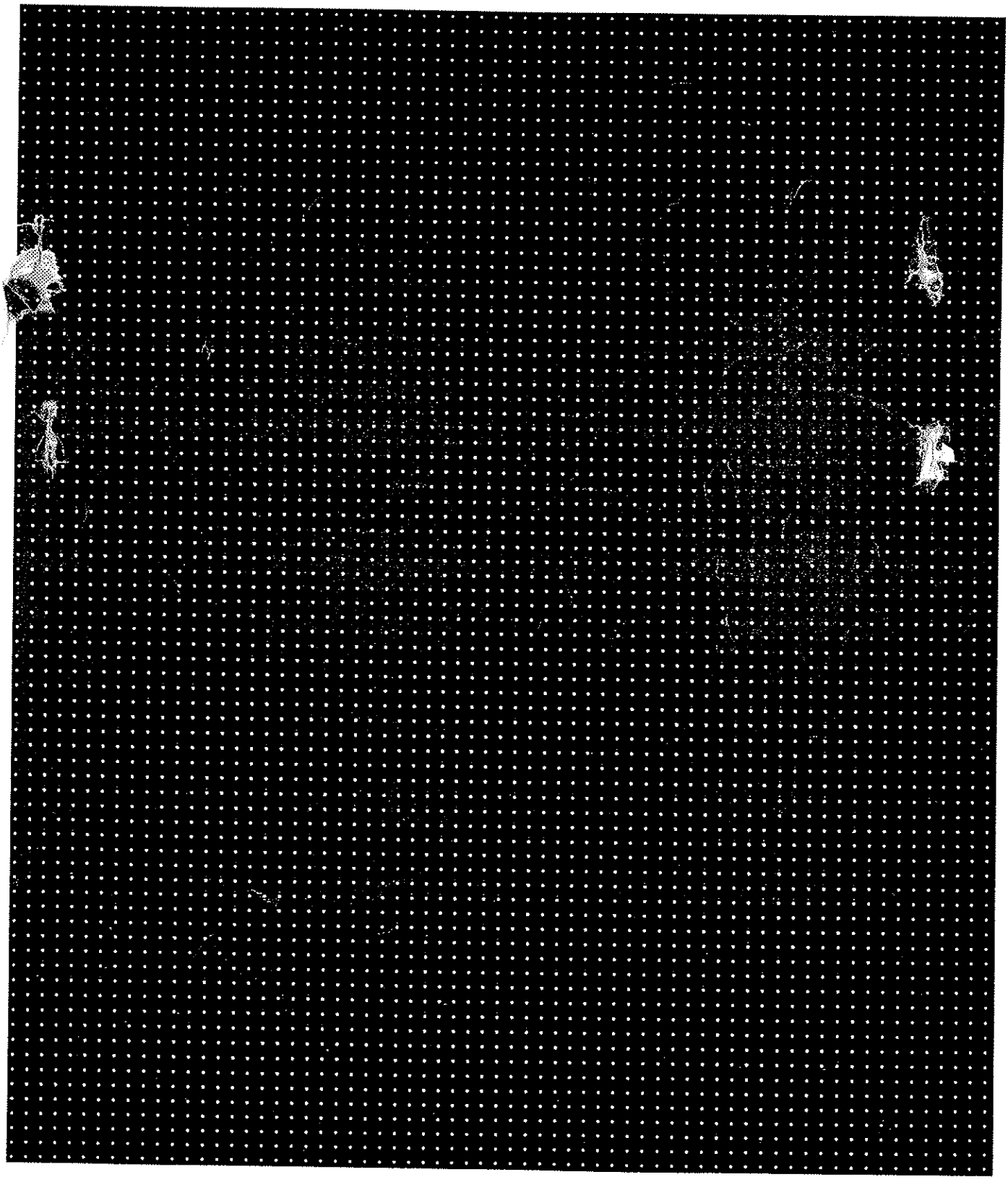
Owners Manual V1.0

SR3000

Split Rail™ Amplifier

JANDS



INTRODUCTION

Thank you for purchasing a Jands SR 3000 Audio Power Amplifier. The SR 3000 has been designed and built in Australia for the Audio Professional and is built to the highest specifications.

Unlike most other power amplifiers the Jands SR 3000 Split Rail™ Power Amplifer has been specifically designed to offer extremely high music power ratings.

IMPORTANT INFORMATION

Please take time to read this page before using your new Jands SR 3000 Split Rail amplifier.

WARRANTY AND UNPACKING

- ❑ **Do not remove the amplifier covers. There are dangerous voltages inside! There are no user-serviceable parts. Removing covers may void your warranty.**
- ❑ **Ensure that your SR 3000 is rated for use on the mains supply voltage of your country. Different models of the SR 3000 are available for use with differing supply voltages.**
- ❑ **Never disconnect or defeat the amplifier earthing. Connect it only to a correctly wired AC Mains outlet.**
- ❑ **There may be in excess of 270V Peak AC at the output terminals, with high current availability. Treat the output wiring as a shock hazard.**
- ❑ **Keep mains supply leads and output leads in good physical and electrical condition.**
- ❑ **Make all connections with power OFF.**
- ❑ **In the event of an accident or impact severe enough to cause visible external damage, the amplifier should be checked internally by a qualified service agent to ensure your safety.**
- ❑ **WARNING! To reduce the risk of fire or electric shock, do not expose this amplifier to rain or moisture**
- ❑ **Give the amplifier ample breathing space at the front and rear.**
- ❑ **The air filters must be removed and cleaned regularly to provide optimum cooling. Wash the filter foam under running water and squeeze dry before replacing.**
- ❑ **To keep the amplifier clean, moisten a soft cloth with a mild soap and water solution.**
- ❑ **Do not apply fluids directly to amplifier.**

This JANDS Product is guaranteed against defects in material and workmanship for a period of two years. JANDS will replace defective parts and make necessary repairs under this warranty if our examination reveals evidence of faulty workmanship or material. The warranty does not cover:

- *Products subjected to abnormal strain, neglect, abuse, modification or accidental damage.*
- *Products from which the name or serial number have been defaced or removed.*
- *The result of normal wear.*

A warranty card is included with your amplifier, which should be returned to JANDS ELECTRONICS or the distributor in your country.

This warranty does not affect the purchaser's rights to product warranty as determined by State or Commonwealth law.

FEATURES

UNIQUE POWER OUTPUT STAGES permit massive transient output energy with high conversion efficiency. The SR 3000 operates as a conventional, high quality bipolar amplifier at normal output levels, then engages a supplementary high voltage stage to allow peak outputs in excess of TWICE the amplifier's normal power.

ULTRA-SOFT TURN ON: Mains inrush is minimised to prevent nuisance tripping of venue breakers.

OUTPUT MUTING: High current output relays are engaged four seconds after turn on, allowing power-up surges from other equipment to settle before the speakers are connected.

FULL SHORT-CIRCUIT PROTECTION: The output stages are electronically protected against shorts without blowing fuses. Protection and recovery are instant.

DC AND LOW FREQUENCY PROTECTION: The speakers are disconnected if damaging quantities of DC or inaudible subsonics are detected. In this situation, the DC LED will illuminate and the ACTIVE LED will turn off.

OVER- TEMPERATURE SHUTDOWN: The speakers are disconnected if the SR3000 overheats, and are reconnected when it cools sufficiently. In this situation, the TEMP LED will illuminate and the ACTIVE LED will turn off.

SOUND QUALITY: Every aspect of the SR 3000 has been designed for optimum sound quality. Input signals are buffered by NE5532 op-amps. The power amplifier uses discrete devices in a fully symmetric complementary design. High-current wiring is totally segregated from small-signal wiring.

POWER SUPPLY: The toroidal transformer has been optimised for high-regulation audio use. The unique Split Rail power output stage provides massive peak power reserves. Nine separate power supply rails and careful attention to layout geometry ensure excellent performance at low and high output levels, and at all frequencies.

COMPACT POWER: is designed to offer more power to weight and more power per rack height than any other amplifier.

ROADWORTHY: The monocoque chassis has been designed for four-point mounting in touring racks. The front panel controls are deeply recessed to eliminate damage. Service access, although unlikely to be required, is excellent.

FRONT PANEL FEATURES

1. POWER SWITCH:
This isolates the amplifier from the incoming mains supply.

2. INPUT ATTENUATORS:
These are variable between 0dB and - ∞ attenuation. The SR 3000 has an input sensitivity of +4dBu nominal, with the attenuation control set at 0 dB.

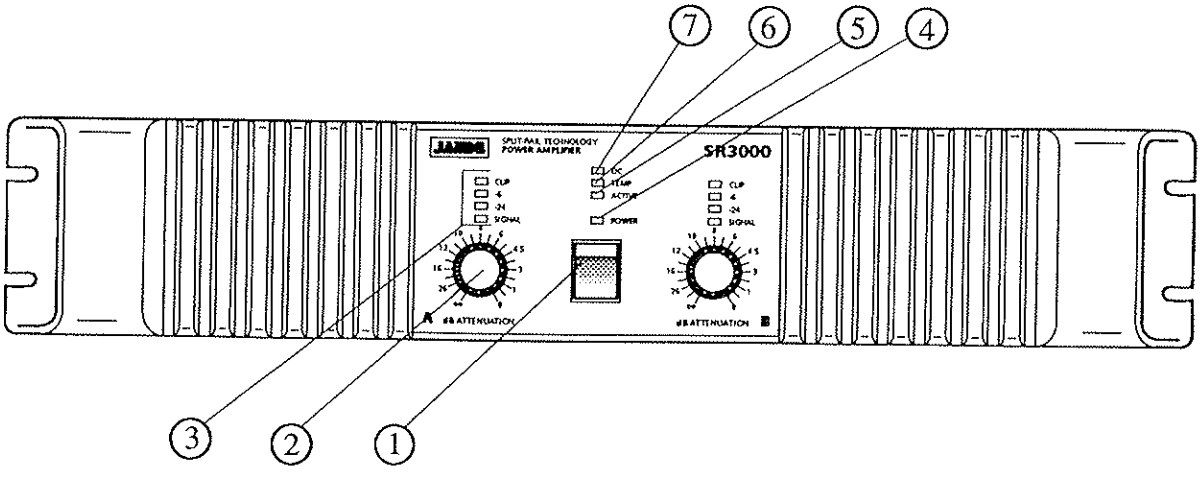
3. TRUE HEADROOM BARGRAPH METERS:
The four-segment LED bargraphs provide a true indication of headroom by continuously measuring the output level against the amplifiers maximum output ability. The top CLIP LED is a sensitive input/output disparity indicator, which shows distortion due to clipping or output short-circuits. The Channel B CLIP LED illuminates with signal when the SR3000 is in bridge mode.

4. POWER LED:
Illuminates to indicate that there is mains power available and that the power switch is on.

5. ACTIVE LED:
Illuminates to indicate that the Output Relays are on.

6. TEMP LED:
Illuminates to indicate that the Amplifier has overheated and so disconnected the speaker outputs.

7. DC LED:
Illuminates to indicate that there is DC or excess very low frequency present and speaker outputs have been disconnected.



4. OUTPUTS:
Three Neutrik Speakons wired as follows:

Ch. A (1+, 1-)
Ch. B (1+, 1-)
BRIDGED MONO (1+, 2+)

For Bi-amplified 2-way use with Low Signal connected to channel A and High Signal connected to channel B, the Loudspeaker should be connected to the "BRIDGED MONO" socket and wired as follows:

Ch. A (Low Signal) Pins 1+ and 1-
Ch.B (High Signal) Pins 2+ and 2-

5. TEMPERATURE-TRACKING FILTERED FANS:
Forced-air ventilation is provided by two (2) rear panel mounted fans. Air movement is rear to front. Care should be taken to ensure air intakes and outlets are not obstructed. The fan filters **MUST** be regularly inspected and cleaned if necessary. The cleaned filter elements may be easily removed and cleaned by rinsing in clean water and drying before re-installation (Clogged filters may cause the amplifier to overheat and disconnect the speaker outputs). The 80mm DC fans are linearly speed-controlled by the heatsink temperature, giving low-noise operation with high cooling capacity when required. The fans idle at 20% for heatsink temperatures less than 25degC (77 deg F), increasing linearly to full-speed at 60degC (140 deg F).

6. POWER CONNECTION & CIRCUIT BREAKER:
Fixed 3-core cable as standard. The 8 amp circuit breaker trips only during prolonged overloads, and is easily reset.

7. RACK MOUNTING:
The rack-mounting brackets allow direct mounting into Universal 19" (482 mm) racks. It is vital that mobile (touring) amplifiers are four-point mounted in racks. Rear mounting brackets are available to suit various racks.

REAR PANEL FEATURES

1. ACTIVE BALANCED INPUTS:
Reduce potential system hum, noise and instability.
3-pin female XLR connectors, wired

Pin 1	Electronics Ground
Pin 2	Hot
Pin 3	Cold

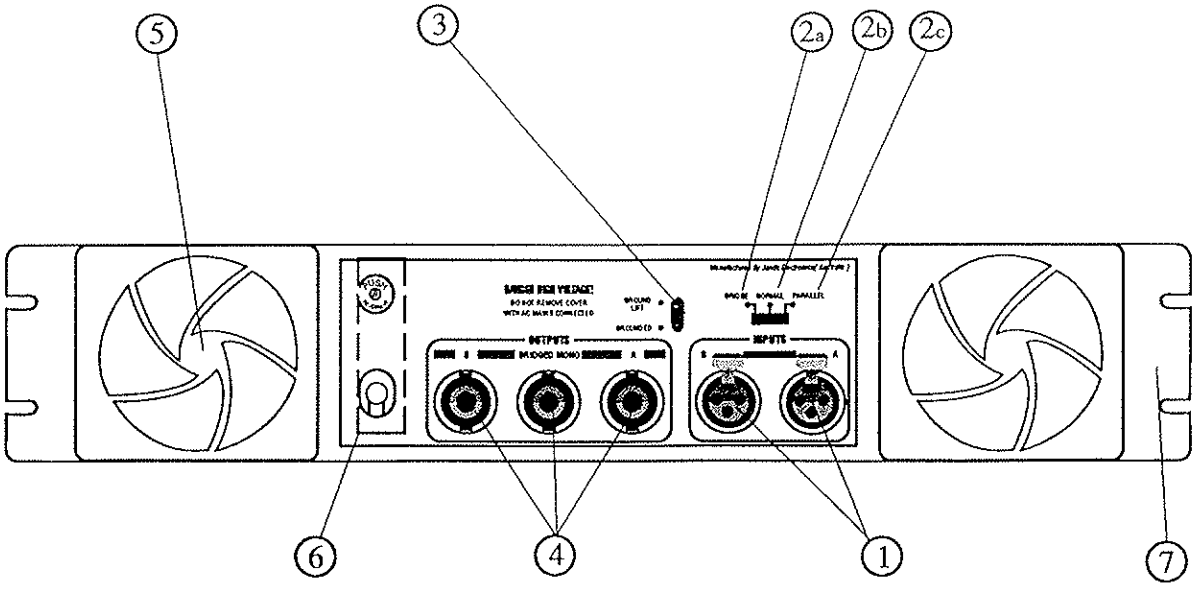
Input sensitivity: +4dBu (Nominal)
+7dBu (1600W)
Input impedance: 20 k ohms.

2a. BRIDGE MODE SWITCH:
Inverts the channel A input signal and feeds it to channel B (Ch. A level-control active). Converts the amplifier into a high-power bridge-mode monoblock (over 2800 watts IEC tone burst power into 8 ohms).

2b. NORMAL MODE SWITCH:
Both channels operate independently of each other. Input attenuators control individual channels.

2c. PARALLEL MODE SWITCH:
Feeds channel "A" input to both channel input attenuators. In this mode Channel B input is not connected.

3. GROUND (EARTH) LIFT SWITCH:
This switch should normally be set to "GROUNDED". In the "GROUND LIFT" position the signal/electronics ground is separated from the chassis/mains ground.



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SPECIFICATIONS

FREQUENCY RESPONSE:
-0.1dB @ 10Hz-20kHz (4 ohm load)

SLEW RATE:
30 V/µsec. (4 ohm load)

PHASE SHIFT:
typical 10deg @ 20kHz

DISTORTION:
Less than 0.25%, 20Hz-20kHz, at any level.
Typically 0.01% 20Hz-1kHz, 3dB below clip.

SIGNAL TO NOISE RATIO:
Better than 100dB re 800 watts/4 ohms

OUTPUT NOISE:
Better than -63dBu (20Hz-20kHz)
Better than -70dBu (A-weighted)

DC OFFSET:
Less than 50mV at the output

CROSSTALK:
Better than 80dB (20Hz-1kHz); better than 70dB (10kHz) with driven channel 1dB below clip, both channels with a 4 ohm load and the measured channel at full gain with un-terminated input.

DAMPING FACTOR:
300 below 1kHz (re 8 ohms)
125 @ 10kHz (re 8 ohms)

AMPLIFIER GAIN:
= x40 (32dB)

PHYSICAL SIZE:
2 unit rack mount chassis with front and rear mounting points.
482mm wide - 88mm high - 440mm deep (between front & rear rack mounting points).
Weight: 20kg

POWER: 240 Volt version:
Circuit breaker 8 amps
Supply voltage 240v nominal 50Hz AC
Voltage range: 200 - 260 volts (output power to vary accordingly)
Idle consumption: typically 100VA
Maximum consumption: 2000VA (4 ohm load)
Inrush current: typically 3amps (internal limit)

SPECIFICATIONS (Continued)

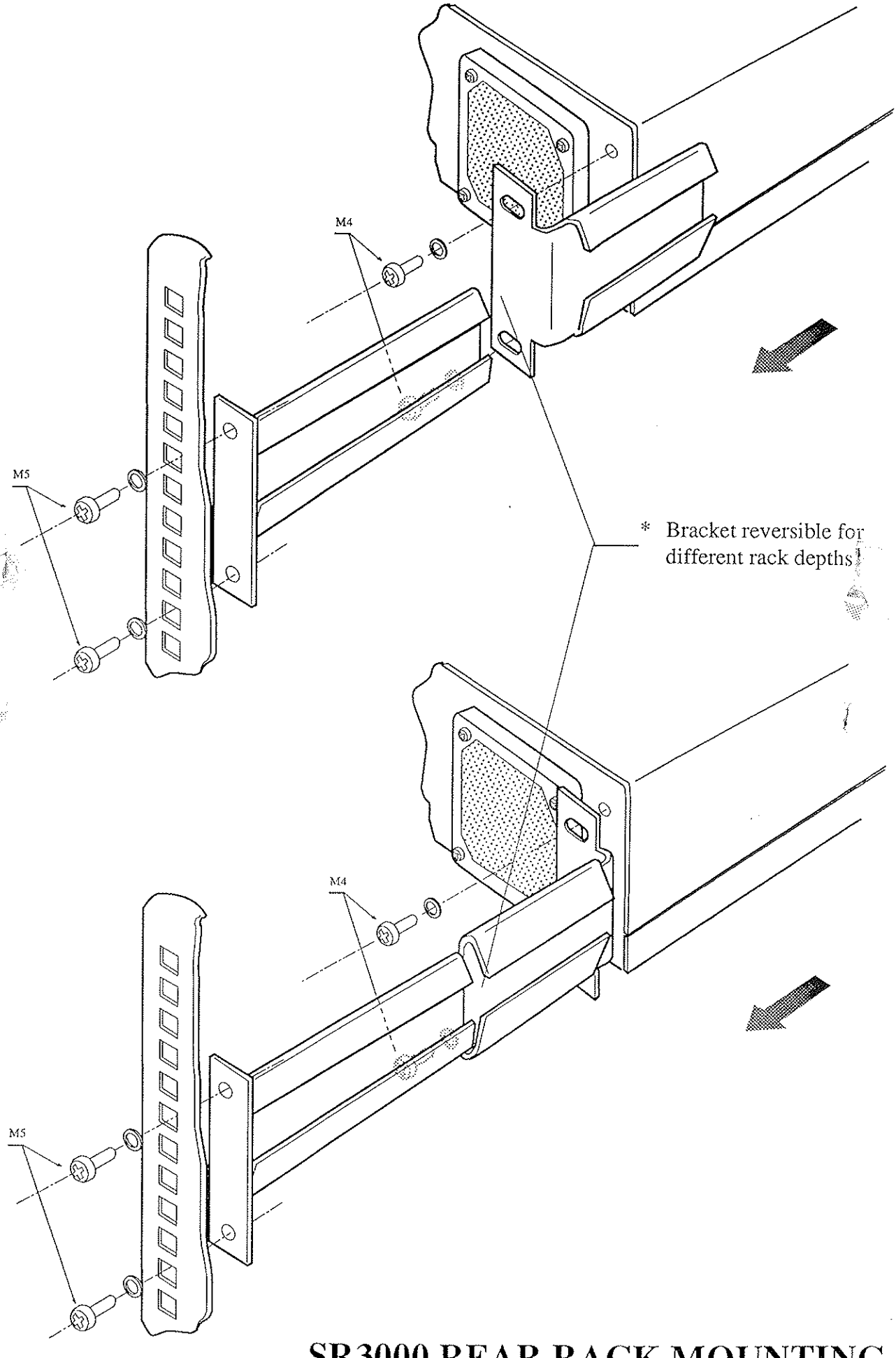
PROTECTION:
Mains circuit breaker: 8 amps.
Internal fuses (10A/M205 fast HRC) x 8 (not user serviceable).
Four second delay for speaker relays.
Over-temperature speaker cutout at 100deg C (212deg F) on each heatsink.
DC speaker cutout at +/-25v.
LF speaker cutout at 10Hz/100v (5Hz/50v).
Short-circuit protection acts on loads less than 2 ohms resistive; unlimited duration until thermal cutout.
Nominal dead-short limit +/- 15 amps. Allows 50amp peaks into normal loads.

NOTES ON SPECIFICATIONS:
All measurements are made at a mains supply voltage of 240 +/- 1%. Most measured parameters will be unaffected by supply variations between 210 and 265 volts. The output power, however, is linked to the mains supply voltage, and will vary by roughly 2% for each 1% of supply variation.

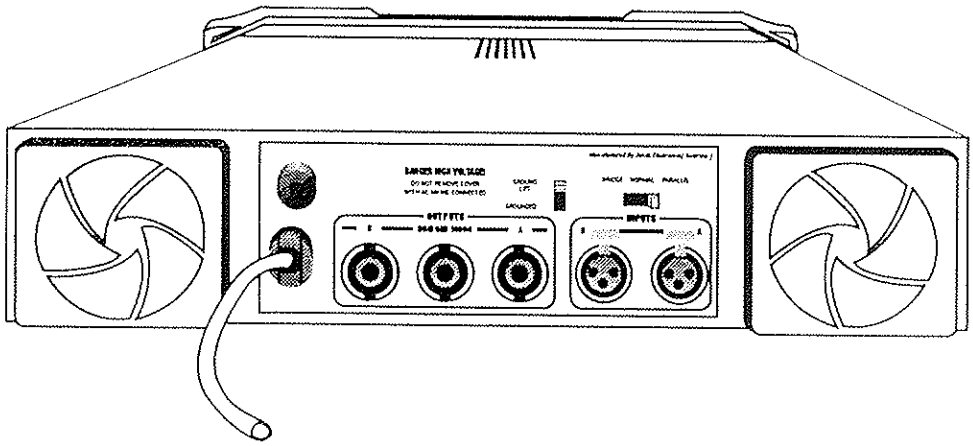
OUTPUT POWER: (RMS Watts)

Load, Ohms	Sinewave both channels driven	Sinewave one channel driven	Sinewave bridged mode	IEC Tone both channels driven	IEC Tone one channel driven	IEC Tone bridged mode
16	420 + 420	490	1250	510 + 510	560	1785
8	630 + 630	840	1600	920 + 920	1010	2800
4	810 + 810	1190	1600*	1400 + 1400	1720	1680
2	825 + 825*	850*	-	840 + 840*	880*	-

*Limited by output protection circuits.



SR3000 REAR RACK MOUNTING



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